Format No: CP/TF/01

## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-03-23-01** **Date: 26-03-18** |
| **Customer** | : | Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore. |
| **Address** | : | Shettyhalli Sub division, BBMP, Bangalore. |
| **Project Name** | : | Construction of RCC drains at 8th cross right side in Santosh nagara in Ward no.13 Shettyhalli Sub division. |
| **Agency** | : | Sri. Nischal .K Lakshman, No.3667, 5th cross, 'B' block, Gayatrinagara, Bengaluru-21 |
| **Customer's Reference** | : | EE/DD/WO/359/17-18 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-03-18 |
| **Sample ID No** | : | 2018-03-23-01 /01 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 24-03-18 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 2.45 | _ |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 265.6 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | _ |
| 4 | Standard Consistency (%) | 28.0% | Not specified |
| 5 | Initial Setting time | 175 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 260 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 2mm | Not more than 10 mm |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

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Samples will be disposed after 90 days from the date of issue of test certificate

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**FOR CIVIL Pro.**

**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**


****End of Report****

Format No: CP/TF/01

## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-03-23-01** **Date: 21-04-18** |
| **Customer** | : | Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore. |
| **Address** | : | Shettyhalli Sub division, BBMP, Bangalore. |
| **Project Name** | : | Construction of RCC drains at 8th cross right side in Santosh nagara in Ward no.13 Shettyhalli Sub division. |
| **Agency** | : | Sri. Nischal .K Lakshman, No.3667, 5th cross, 'B' block, Gayatrinagara, Bengaluru-21 |
| **Customer's Reference** | : | EE/DD/WO/359/17-18 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-03-18 |
| **Sample ID No** | : | 2018-03-23-01 /01 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 6, Determination of Compressive Strength, Clause 6 |
| **Date of test** | : | 24-03-18 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

**Compressive Strength**

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | 3 Days | 28.5N/mm$^2$ | Not less than 27 N/mm$^2$ |
| 2 | 7 Days | 38.0N/mm$^2$ | Not less than 37 N/mm$^2$ |
| 3 | 28 Days | 54.5N/mm$^2$ | Not less than 53 N/mm$^2$ |

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Authorized Signatory
**Quality Manager**


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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-03-23-01** **Date: 26-03-18** |
| **Customer** | : | Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore. |
| **Address** | : | Shettyhalli Sub division, BBMP, Bangalore. |
| **Project Name** | : | Construction of RCC drains at 8th cross right side in Santosh nagara in Ward no.13 Shettyhalli Sub division. |
| **Agency** | : | Sri. Nischal .K Lakshman, No.3667, 5th cross, 'B' block, Gayatrinagara, Bengaluru-21 |
| **Customer's Reference** | : | EE/DD/WO/359/17-18 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-03-18 |
| **Sample ID No** | : | 2018-03-23-01 /02(a) |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 23-03-18 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 339 | 339 | 2.3 | 97.7 | 90-100 |
| 3 | 20 mm | 5471 | 5810 | 38.7 | 61.3 | 30-70 |
| 4 | 10 mm | 4638 | 10448 | 69.7 | 30.3 | 10-35 |
| 5 | 4.75 mm | 4223 | 14671 | 97.8 | 2.2 | 0-5 |
| 6 | Pan | 329 | 15000 | 100.0 | 0 | --- |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2018-03-23-01** **Date: 26-03-18**

**Sample ID No** : 2018-03-23-01 /02(a)

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | **11.3** | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | **10.6** | |
| 3 | Specific Gravity | **2.68** | _ |
| 4 | Bulk Density(Loose) (Kg/l) | **1.52** | _ |
| 5 | Bulk Density(Compacted) (Kg/l) | **1.56** | _ |
| 6 | Water Absorption(%) | **0.24** | _ |

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ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ರಾಜರಾಜೇಶ್ವರಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಮಹಾ.ಎಂ. ರಸ್ತೆ, ದಾಸರಹಳ್ಳಿ

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**FOR CIVIL Pro.**

**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**


****End of Report****

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Format No: CP/TF/01

## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-03-23-01** **Date: 26-03-18** |
| **Customer** | : | Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore. |
| **Address** | : | Shettyhalli Sub division, BBMP, Bangalore. |
| **Project Name** | : | Construction of RCC drains at 8th cross right side in Santosh nagara in Ward no.13 Shettyhalli Sub division. |
| **Agency** | : | Sri. Nischal .K Lakshman, No.3667, 5th cross, 'B' block, Gayatrinagara, Bengaluru-21 |
| **Customer Reference** | : | EE/DD/WO/359/17-18 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-03-18 |
| **Sample ID No** | : | 2018-03-23-01 /02(b) |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 23-03-18 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken : 5000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 421 | 421 | 8.4 | 91.6 | 90-100 |
| 3 | 10 mm | 2472 | 2893 | 57.9 | 42.1 | 25-55 |
| 4 | 4.75 mm | 1951 | 4844 | 96.9 | 3.1 | 0-10 |
| 5 | Pan | 156 | 5000 | 100 | 0 | – |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2018-03-23-01** **Date: 26-03-18**

**Sample ID No** : 2018-03-23-01 /02(b)

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 10.2 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 12.1 | |
| 3 | Specific Gravity | 2.62 | _ |
| 4 | Bulk Density(Loose) (Kg/l) | 1.52 | _ |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.58 | _ |
| 6 | Water Absorption(%) | 0.25 | _ |
| 7 | Aggregate crushing Value(%) | 23.1 | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 21.7 | 30% for Aggregates to be used in concrete for wearing Surface,<br>45% for Aggregates to be used in concrete other than for wearing Surface. |

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**FOR CIVIL Pro.**

**R KARTHIK RECHAN**
Authorized Signature
**Quality Manager**



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